

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

Claim 1 (previously presented): A metallic glass laminate, wherein a thermal sprayed coating layer of a metallic glass of an amorphous phase is formed on a substrate surface and no continuous pore (pinhole) through the thermal sprayed coating layer of the metallic glass is present, wherein the supercooled liquid temperature range ΔT_x of the metallic glass is equal to or more than 30 °C, and wherein the porosity of the thermal sprayed coating layer of the metallic glass is equal to or less than 2%.

Claim 2 (previously presented): The metallic glass laminate according to claim 1, wherein the thermal sprayed coating layer of the metallic glass is formed by deposition and solidification of at least part of the metallic glass powder in a supercooled liquid state on the substrate surface.

Claim 3 (previously presented): The metallic glass laminate according to claim 1, wherein metallic glass of amorphous phase prepared in advance is used as a thermal spraying material to form the thermal sprayed coating layer of the metallic glass.

Claim 4 (previously presented): The metallic glass laminate according to claim 1, wherein the thickness of the thermal sprayed coating layer of the metallic glass is equal to or more than 10 μm .

Claims 5-7 (cancel)

Claim 8 (previously presented): The metallic glass laminate according to claim 1, wherein the thermal sprayed coating is a high-velocity oxygen-fuel thermal sprayed coating.

Claim 9 (previously presented): The metallic glass laminate according to claim 1, wherein there is lamination of a thermal splayed particle, which is thinly collapsed in a circular to oval shapes or has a core that is thinly collapsed in a circular to oval shape at the center, in the thermal sprayed coating layer of the metallic glass.

Claim 10 (previously presented): The metallic glass laminate according to claim 1, wherein the metallic glass consists of a plurality of elements and contains at least one element from the group of Fe, Co, Ni, Ti, Zr, Mg, Cu, and Pd as its constituent element.

Claim 11 (previously presented): The metallic glass laminate according to claim 10, wherein the metallic glass contains Fe in a range of 30-80 atomic % as its constituent element.

Claim 12 (previously presented): The metallic glass laminate according to claim 1, wherein the substrate is metal or ceramic.

Claim 13 (previously presented): The metallic glass laminate according to claim 12, wherein the substrate is a light metal having a specific gravity equal to or less than 3.0.

Claim 14 (previously presented): The metallic glass laminate according to claim 1, wherein the thermal sprayed coating layer of the metallic glass formed on the substrate surface has a pattern.

Claim 15 (previously presented): The metallic glass laminate according to claim 1, wherein the substrate surface has a convexo-concave pattern and the thermal sprayed coating layer of the metallic glass is formed thereon.

Claim 16 (previously presented): The metallic glass laminate according to claim 1, wherein a surface of the thermal sprayed coating layer of the metallic glass has at least one of a concavo-convex pattern and a mirror-like smooth surface.

Claim 17 (previously presented): The metallic glass laminate according to claim 1 wherein the thermal sprayed coating layer of the metallic glass absorbs hydrogen under a hydrogen atmosphere to change an electrical characteristic value thereof.

Claim 18 (previously presented): A metallic glass bulk, wherein the bulk is obtained by removing the substrate from the metallic glass laminate according to claim 1.

Claim 19 (original): A hydrogen sensor, wherein the metallic glass laminate according to claim 17 or a metallic glass bulk obtained by removing the substrate from the metallic glass laminate is applied.

Claims 20-27 (cancel)

Claim 28 (previously presented): The metallic glass laminate of claim 16, wherein the thickness of the thermal sprayed coating layer of the metallic glass at the thin section is equal to or more than 0.1 mm.

Claims 29-31 (cancel)

Claim 32 (previously presented): The metallic glass laminate according to claim 1, wherein the substrate is a porous material.

Claim 33 (previously presented): The metallic glass laminate according to claim 32, wherein the thermal sprayed coating layer of the metallic glass has gas selective permeability.

Claim 34 (previously presented): The metallic glass laminate according to claim 33, wherein the selected gas is hydrogen.

Claim 35 (previously presented): The metallic glass laminate according to claim 32, wherein the thickness of the thermal sprayed coating layer of metallic glass is 1-1000 μm .

Claim 36 (previously presented): The metallic glass laminate according to claim 32, wherein the pore diameter of the porous material is in the range of 0.1-1000 μm .

Claim 37 (previously presented): The metallic glass laminate according to claim 32, wherein the shape of the laminate is tubular.

Claim 38 (previously presented): A gas separation membrane, wherein the metallic glass laminate according to claim 32 is applied.

Claim 39 (cancel)

Claim 40 (previously presented): A solder-corrosion resistant member, wherein a contact surface to molten solder or an underlayer of a contact surface to molten solder is formed of a thermal sprayed coating layer of a metallic glass of an amorphous phase formed on a substrate surface and no continuous pore (pinhole) through the thermal sprayed coating layer of the metallic glass is present, wherein the supercooled liquid temperature range ΔT_x of the metallic glass is equal to or more than 30 $^{\circ}\text{C}$, and wherein the porosity of the thermal sprayed coating layer of the metallic glass is equal to or less than 2%.

Claim 41 (cancel)

Claim 42 (previously presented): The solder-corrosion resistant member according to claim 40, wherein the solder is a lead-free solder.

Claim 43 (previously presented): A soldering iron tip, wherein the tip is made of a solder-corrosion resistant member according to claim 40.

Claim 44 (previously presented): A solder bath, wherein the bath is made of a solder-corrosion resistant member according to claim 40.

Claim 45 (previously presented): The solder-corrosion resistant member according to claim 41, wherein the solder is a lead-free solder.

Claim 46 (withdrawn): A method of producing the metallic glass laminate of claim 1, comprising thermal spraying amorphous metallic glass powder on the substrate surface, said thermal spraying comprising

- (a) heating the amorphous metallic glass powder to at least the glass transition temperature and below the crystallization starting temperature to convert at least a part of the amorphous glass powder to a supercooled liquid state, and
- (b) depositing and solidifying the metallic glass powder on the substrate to produce the metallic glass laminate.

Claim 47 (withdrawn): The method of claim 46, wherein the thermal spraying is high-velocity oxygen-fuel thermal spraying.

Claim 48 (withdrawn): The method of claim 46, wherein the thermal spraying is conducted on a substrate having a surface temperature of at least 100 °C.

Claim 49 (withdrawn): The method of claim 46, further comprising removing the substrate from the glass laminate to form a metallic glass bulk.

Claim 50 (withdrawn): A method of producing the article of claim 27, the method comprising:

- (a) producing the metallic glass laminate of claim 46, and
- (b) pressing the surface of the thermal sprayed coating layer of the metallic glass laminate with a die in the supercooled temperature range of the metallic glass to transfer the die pattern to the surface.

Claim 51 (withdrawn): The method of claim 50, wherein the thermal spraying is high-velocity oxygen-fuel thermal spraying.

Claim 52 (withdrawn): The method of claim 50, wherein the thickness thermal sprayed coating layer of the metallic glass laminate to be pressed with the die is at least 0.1 mm.

Claim 53 (withdrawn): The method of claim 46, wherein the substrate is porous.

Claim 54 (previously presented): The metallic glass laminate according to claim 1, wherein the thermal sprayed coating layer of metallic glass has crystallization degree of 10% or lower.